EPILEPTIC CHILDREN

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EPILEPTIC CHILDREN

THE COMMITTEE FOR THE STUDY OF THE CARE AND EDUCATION *of* PHYSICALLY HANDICAPPED CHILDREN *in the* PUBLIC SCHOOLS OF THE CITY OF NEW YORK

REPORT OF THE SUB-COMMITTEE ON EPILEPTIC CHILDREN

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* Deceased April 16, 1940.
‡ Retired January 31, 1941.

REPORTS

of

THE COMMITTEE FOR THE STUDY OF THE CARE AND EDUCATION OF PHYSICALLY HANDICAPPED CHILDREN

GENERAL REPORT

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CONTENTS

Preface

THIS STATEMENT of findings and conclusions of the committee studying the problems of epileptic children is one section of the report of the Committee for the Study of the Care and Education of Physically Handicapped Children in the Public Schools of the City of New York. The Committee was appointed by the Board of Education in 1936. All of its inquiries, which extended over a period of more than three years, have been made by sub-committees. No appropriation was given the Committee for the employment of technical and clerical personnel. The studies were possible only because of the voluntary assistance of physicians, educators and other specialists who have given much time and consideration to the problems presented by handicapped children, the provisions now made for them and the ways in which the existing program can be improved. Clerical and statistical help was provided by the Works Project Administration and numerous philanthropic organizations.

In addition to the persons listed in this report the Committee is indebted to the Superintendent of Schools, Dr. Harold G. Campbell, to the teachers and school officials and others who have helped in the survey. The Director acknowledges his personal indebtedness to Dr. Lyman C. Duryea and to Dr. Robert T. Rock, Jr. Finally he is indebted to the Public Health Relations Committee of the New York Academy of Medicine which has critically reviewed this and the other reports of the Committee.

HAROLD W. MCCORMICK,

Director.

Organization of the Committee and Definition of Problem

IN OCTOBER, 1939, a committee was formed to participate in the general survey being made for the Board of Education with respect to the care and education of physically handicapped children.

Although other cities of the United States have recognized that certain epileptics involve a special educational problem, this Committee's effort has been to get all the available and relevant information about children in New York City. For approximately twenty years the Department of Education of New York City has had a special branch or division for the instruction of physically handicapped children.

With respect to the incidence of epilepsy, one should first attempt to define the term. In recent years, the word "epilepsy" is being replaced by the term "convulsive seizure," and the tendency to such attacks is known as a "convulsive disorder." While it is recognized that there are many seeming causes for the occurrence of attacks in individuals, it is becoming recognized that in a large proportion of cases there is probably an inborn predisposition to such physical reaction. A person may have one attack during a life time; on the other hand, seizures may first appear at any time in life and continue for varying periods, sometimes with years of freedom from attacks. In general, the "epileptic" is understood as a person subject to repeated seizures, regardless of what seems to be the precipitating cause. Since the tendency to seizures occurs as a symptom in a number of organic or structural defects of the brain—either prenatal or post-natal in origin—it is recognized that the incidence of some degree of mental deficiency is greater among those subject to repeated epileptiform attacks than it is in the population at large. The percentage of the population subject to epileptiform seizures is reported by various authorities as varying from one

in a thousand of the population to one in two hundred. With respect to the age at onset of seizures, various authorities state that from perhaps thirty to as high as fifty percent of individuals subject to repeated seizures have their first attacks during or prior to puberty.

Any good textbook in psychiatry or neurology will present in readable form, intelligble to a properly trained educator, the facts with respect to the tendency to recurrent epileptiform seizures. Nevertheless, a very brief description of this disorder may be helpful.

An "epileptic" seizure, or fit, or "grand mal attack" manifests itself in three stages. The first stage, or onset, may last two or three seconds or in some instances as long as half a minute. The sufferer may utter a cry, stiffen out, collapse, and become unconscious—or unresponsive to stimuli. There may be pallor, but congestion of the blood in the face is more common. The next phase is the convulsive atack itself. In the great majority of cases, there are involuntary and uncontrollable jerks or twitchings, which may be limited to one extremity, the face muscles, or one half the body; commonly, the entire body is involved in such convulsive movements. Frothing at the mouth and emptying of the bladder may occur. In a few moments, usually not more than ten minutes, the convulsive movements gradually cease, the color of the skin returns to normal, and the sufferer may appear to be asleep. The third stage, or "after-stage" varies considerably. Weakness and lassitude, headache and mental confusion and retardation are often evident, and the sufferer may fall asleep. Usually within half an hour the sufferer appears to have returned to normal.

It is this sort of fit which seizes the attention of the layman, and which produces anxiety in the minds of school officers.

Less severe types of epileptic manifestations include the so-called "Jacksonian seizure" and the petit mal attack. The

former may commence in a manner similar to the grand mal attack, with the movements usually limited to one side of the body, but as a rule consciousness is retained and the patient does not completely lose control, and is able to afford himself some protection against injury due to a fall. In the "petit mal" attack, the manifestation may be so slight that its occurrence passes unnoticed. A failure to attend momentarily to what is going on, with a brief twitching or quivering of the body, may be all that can be observed. Usually, the sufferer is unaware that the attack is occurring, but immediately afterward knows that it has taken place.

While it is not yet definitely established or agreed to by all authorities that there is often a congenital or hereditary predisposition to all epileptiform manifestations, it is recognized that predisposing or precipitating factors can usually be determined through the study of an individual sufferer. The incidence of some form of structural disease of the brain is rather high in sufferers from epileptic seizures. Attacks occur relatively frequently in individuals with mental deficiency, whether or not the defect is demonstrably connected with any structural changes in the brain. Children with certain types of unstable nervous systems are prone to convulsive seizures or epileptic attacks when their health is impaired by some transient disorder. It has long been known that emotional or mental stress serves to increase the frequency of seizures.

The search for primary, secondary and contributing causes requires the attention of a physician familiar with diseases of the nervous system. In the more difficult problems, the medical inquiry may require hospital study, the performance of various special tests, and observation which may not yield results enabling a conclusion until a year or more has passed.

Epileptic seizures are physiologically related to other paroxysmal episodic disorders which may affect other organs in the body. The most important criterion of a true epileptiform attack is a complete loss of consciousness or awareness of

surroundings during an attack. There are many individuals whose "attacks" are difficult to differentiate from the acute emotional disturbances and displays of individuals who are suffering from some purely psychological disorder. A rather rare form of true epilepsy consists of transient uncontrollable displays of reasonless temper, and even episodes of seemingly silly or purposeless conduct of which the individual is unaware and has no recollection.

It is well recognized that those who have repeated and frequent grand mal seizures may develop a progressive loss of intelligence. This fact is of particular importance to the educator whose primary function and purpose it is to discipline the mind and teach the things which may not only enable the individual to be a self-sustaining member of society, but make him a useful citizen.

The Committee made a survey of literature dealing with methods of measuring intelligence, and the intelligence of epileptics. A comprehensive and accurate presentation of this literature would have extended the work of the Committee beyond its basic purpose, and required an expenditure of time not available. The subject has therefore been omitted from this report.

Organization of the Survey and Departmental Organization

QUESTIONNAIRES WERE sent to every teacher of epileptic pupils under home instruction.

The questionnaire sent to the principals of all the public schools in New York City was so phrased that inevitably certain children would be included who may have some form of syncope or loss of consciousness, but are not subject to recurrent seizures of definite epileptiform character. A few children in poor general physical condition or with certain types of cardiac disease were known to be subject to ordinary syncope, a small number of children with diabetes mellitus required the special attention of teachers because they might develop insulin shock and either go into a coma or have a convulsive seizure. Of the total of 958 children reported, there were certain other sources of error in attempting to get an accurate total. A few children reported as having been excluded from school during the two years previous to the reporting date had either returned to regular class or had been placed on home instruction, and thus their names appeared twice. A number of children were reported as having been transferred from one school to another; in most instances the new school did not report these children as enrolled—thus suggesting that the school system does not have a smoothly working and accurate system of recording and keeping track of these children.

After a study of the questionnaires that were returned, and tabulation of certain data obtained from these questionnaires, a program of visits to pupils was arranged.

The work of visiting the reported pupils was scheduled in the following manner. The borough of Richmond was excluded because of its inaccessibility to physicians serving on the Committee and the small number of pupils reported. Each

of the other boroughs in New York City had designated as supervising physician a member of the Committee, who was responsible for the direction of other physicians giving voluntary service as assistants.

In selecting physicians to engage in the visiting program, an adequate background in neurology and psychiatry was regarded as a requisite.

The pupils known to the school system as subject to epileptiform convulsions were reported in three groups. First were those still attending school; second were those excluded from class any time during the two years prior to the reporting date, which was approximately January 1, 1940; third were the pupils who had been assigned to home instruction.

Visits were made to children in the first and third groups. Of the second group, a number were found reported as under home instruction; of the others in the second group, some presumably changed residence and dropped out of sight, and an attempt to arrange authorization by the parents to make a home visit was regarded as sufficiently difficult and time consuming to justify omission.

Inasmuch as a total of 958 children were reported, the visiting program was restricted to the personal examination of a sufficient number of children to represent a correct sample of the entire number. Since study of the returned questionnaires showed certain apparent common and important facts, and since additional information was regarded as desirable with respect to a certain number of pupils, the visiting list was made up accordingly.

For example, children whose diagnosis seemed dubious were selected for visits. In certain instances children presenting a vocational training problem were selected. Perhaps half of the children presented these or analogous special problems. The remainder of the children visited were picked at random.

The procedure in making visits was as follows. The physician visiting a child in regular class first arranged with the principal of the school for a convenient time. The principal attempted to obtain written parental consent for the examination of the pupil. When the parents refused such an examination, the physician limited his contact with the pupil to inspection and questioning of the child on presumably relevant matters. When reporting to the school in question, the visiting physician reviewed the information in the principal's office and then conducted an examination of the pupils, filling out a special visiting form. The visting forms were forwarded promptly to the Borough Supervisor who then forwarded them to the Chairman of the Committee.

With respect to pupils under home instruction, the procedure was different. Each physician doing such visiting work first interviewed the teachers of pupils assigned to him. Then, if written parental authorization for a visit was obtained by the teacher, an appointment was made for the physician to examine the child in its own home where the visiting form was filled out. These visiting forms were forwarded directly to the Chairman of the Committee.

In general, it can be said that the principals of schools and the teachers of children under home instruction had a cooperative attitude. In a few instances, it was necessary to reassure principals or teachers that the various physicians were engaged in a survey authorized by the Board of Education and there were occasional instances where the attitude was very suggestive of opposition to the proposed visits.

In the course of the visiting work, over 260 children were examined. Of these about 200 were pupils in school; the rest were under instruction at home.

From the questionnaires, the names of 62 children reported as having been examined or cared for in one of the units of the Columbia-Presbyterian Medical Center were given to a member

of the Committee who made a special study of the medical records of these children.

Although the pupils excluded from school were not visited personally, those who had been reported as examined or cared for at certain of the larger municipal or voluntary hospitals were selected and the medical records of those children studied. The additional medical information thus obtained was found to add little to what was previously known.

In connection with the preliminary work of this Committee, its Chairman interviewed certain officers of the Department of Education.

On March 19th, the Director of the Survey of the Physically Handicapped, and the Chairman of this Committee had an interview with the Associate Superintendent in Charge of the Education of the Handicapped and the Assistant Director in charge of instruction of physically handicapped children. The Associate Superintendent had another appointment which made it necessary for her to leave before the interview was completed.

The Associate Superintendent and the Assistant Director concurred in giving the following information:

1. Procedures with respect to epileptic children have not changed since 1933.

2. It is seldom that a parent voluntarily informs the school of the existence of fits. In the majority of instances, discovery occurs if a fit happens during class hours or on the school premises; occasionally instances of epilepsy are discovered in the course of examination of children referred to the Bureau of Child Guidance because of their behavior, or to the Bureau for Children with Retarded Mental Development.

3. Before considering excluding the child from school, efforts are made to obtain the cooperation of the parents, with respect not only to medical examination and attention but other matters that are germane. If exclusion of a child is considered,

then the Medical Board is responsible for making an examination and giving a recommendation as to exclusion. Neither the Associate Superintendent in Charge of the Education of the Handicapped nor the Assistant Director in Charge of the Division of Physically Handicapped Children were able to state the Medical Board's standards for recommending exclusion, but they both agreed in saying that its recommendations are almost invariably followed. There is no psychiatric or psychological examination given to the child prior to exclusion unless it has been in a class for children with retarded mental development.

4. Once a child has been excluded from school, it is placed on home instruction as soon as opportunity is available. There is a further check up of the child before assignment to home instruction. Reports from physicians are obtained, the school record is studied, and a psychometric examination is made. Unless a child is regarded as non-educable or unable to benefit from home instruction, this facility is granted. Since the State law arbitrarily establishes an I. Q. of between 50 and 75 for classification as mentally retarded, children in this intelligence level group may be referred to the Bureau for Children with Retarded Mental Development and if regarded as non-educable and certified as such by the Superintendent of Schools, home instruction may be denied.

5. If a child is regarded as subnormal mentally, after a complete survey, and there is doubt as to the feasibility of home instruction, a trial is given and home instruction continued if satisfactory progress is being made. The Assistant Director stated, in response to a letter of inquiry from the Chairman of this Committee, that approximately 26% of the epileptics under home instruction are below border line intelligence and had been continued under home instruction as part of an experimental study.

6. Teachers assigned to home instruction are not provided with the results of psychometric tests. Teachers giving home instruction are required to submit regular reports as to

the progress of the child, the occurrence of seizures, and whether or not medical attention is provided by the parents. If progress is unsatisfactory, a child may be referred to various institutions in the city, particularly Bellevue Hospital, and institutional care arranged for if it is deemed advisable.

There are no standards for what might be regarded as satisfactory progress under home instruction. Children originally identified as retarded or defective mentally are not required to submit to repetitions of the various psychometric tests.

7. "Every child has the right to individual study and adjustment." Information was not available as to how frequently it is that a home instruction teacher reports satisfactory progress. Only a very small percentage of epileptics under home instruction are reported as deficient in progress, and many of these children may return to school after six months or a year of home instruction. About October, 1939, the ruling was made providing that if a child has been free of seizures for six or eight months, it returns to regular class work—such children no longer being routed through the office of the Medical Board.

The Asistant Director in Charge of the Division of Physically Handicapped Children gave the following additional information:

1. Children remain under home instruction unless they improve sufficiently to return to regular class, or unless they are regarded as not benefited from the special home teaching. What the turnover has been during the past years is not readily determinable, but the facts could be obtained by reference to the semiannual lists of children under home instruction and determining by the names whether or not a child's status has changed. The guess was ventured that perhaps twenty-five of about three hundred epileptics under home instruction as of June 30, 1939, might have returned to school since that date and that perhaps there is a ten per cent turnover. Of the

few excluded from any instruction, most of them are sent to the Craig Colony.

2. More than fifty per cent of the epileptics under home instruction are assigned by request of their parents (after submitting adequate medical information) and these children have not been examined by the Medical Board and have not been officially excluded from regular class by the usual routine. While under home instruction, medical care is required. That is, the home instruction teacher reports at least twice a year with respect to the medical care provided. There is no knowledge of any case of an epileptic under home instruction not receiving medical care.

3. When asked again with respect to the question of repeating psychometric tests, the reply was to the effect that I. Q.'s are a "movable item," that giving this information to home instruction teachers is contrary to policy, and that although the home instruction teachers were sufficiently trained, one could judge the progress of the child by many factors, and that one made allowance for the sort of progress which a child might be predicted to make before assignment to home instruction.

4. When asked what might be the procedure if a sixteen year old child had been under home instruction for several years and was still at the 3A grade level, the reply was to the effect that such a thing was not known, would not happen in a thousand years, but that if it should occur it would have been a great waste of money or that the child would have landed somewhere else. Then it was said, "One can't regiment epileptics; any doctor who is experienced with such children knows this is true."

5. While the State law provides that a pupil may remain under home instruction until the age of 21, this would not be permitted unless the pupil was benefited.

6. When asked as to how many epileptics there are remaining under instruction in school, the reply was to the effect that "there are not many of them."

* * * * *

The Director of the Bureau for Children with Retarded Mental Development was not available, but in her absence three physicians attached to the Division for Children with Retarded Mental Development were interviewed April 10, 1940 and the following information was received:

1. No detailed analysis of the children referred to this Bureau, which deals with about 1500 different cases a year, was available.

It is the custom of this Bureau to submit reports to the sources referring children and in some cases the reports are also sent to the Assistant Director of the Division of Physically Handicapped Children.

2. There are the following figures as to the incidence of convulsive seizures in the group referred to this department:

School year 1936-37	78 children
" " 1937-38	75 children
" " 1938-39	81 children

3. Of these various children, some were not enrolled in the public schools of New York City but were referred from certain institutions not connected with the Department of Education. There are no accurate figures available as to the number of children referred from the office of the Assistant Director in charge of instruction of physically handicapped children. Such cases were infrequent, and represented a very small percentage of the annual total of children having convulsive seizures. (If one were to accept the statements of these three physicians as reasonably accurate, it would be fair to infer that of the 81 children with convulsive seizures seen by the Bureau in the 1938-39 school year, definitely less than half were referred from the Division of Physically Handicapped

Children and it would not be unreasonable to assume that perhaps only 25% were so referred.)

The Inspector of Industrial and Placement Work for Physically Handicapped Children was interviewed on April 3, 1940. She stated that her field of work does not include contacts with epileptic children and that she does not have such cases referred to her either from the Division of Physically Handicapped Children, or from any of the vocational or regular high schools which may be confronted with the problem of epileptic children. Her responsibilities are limited to other types of physically handicapped children in the elementary schools.

Her experience does not enable her to give any information or suggestions as to children subject to convulsive seizures.

On March 11, 1940, the Chairman of the Committee interviewed physicians attached to the Medical Board. According to their estimate approximately 200 epileptic children are annually referred by school officers for examination and advice as to disposition. The exact figures from the school records are as follows:

School year 1936-37	166
" " 1937-38	166
" " 1938-39	220

Approximately 25% of the children who reported during these years were revisited.

Some of these children had medical records or information from the school principals which the examining physicians found useful. An average of perhaps fifteen minutes time was spent in the examination of each child. If a child was regarded as retarded or defective mentally, it was referred to the Bureau for Children with Retarded Mental Development. Recommendations as to exclusion from attendance in school is forwarded to an Assistant Superintendent and action on the recommendation is not always reported back to the Medical Board.

The Medical Board has no information about children who have passed the 8B grade. Occasionally a child once excluded from school applies for readmission to regular class, but it is seldom that such children are referred for examination.

The Chief Medical Examiner was interviewed by telephone on March 26, 1940.

In response to questions he stated the following:

1. Many of the children referred to his Department as epileptics have had only one convulsion and some form of "allergy" is a common cause in such cases.

2. There is no rigid standard for excluding a child from attendance at regular class. A "committee" of principals and superintendents has agreed that a child may have as many as two attacks in class in one semester or term and remain in school. Variations from this criterion are discretionary with the principals of schools. Other factors may be of importance in determining whether or not a child should be excluded from regular class.

3. Once a child has been excluded from school, there is no system or requirement for any sort of medical follow-up.

The Director of the Bureau of Child Guidance was interviewed on March 19, 1940. His office has referred to it during the course of a year perhaps half a dozen children whose medical problem is that of convulsive seizures. Of the various children referred to his office because of some form of behavior or conduct disorder, the occurrence of epileptic seizures is revealed perhaps six times a year.

The Director stated that it was his impression that the school system does not follow any particular standard for the exclusion of the child from regular class, and does not require any systematic medical follow-up of such children who have been excluded or placed under home instruction.

Reports From Other Cities
In The United States

CERTAIN OTHER cities in the United States have dealt with the problem of epileptic school children. Below are excerpts from letters describing what has been done in other cities.

1. Letter of Charles F. Good, M.D., Directing Supervisor, Medical Inspection, Board of Education, Cleveland, Ohio: "Epileptic children are discovered by examination and history at the time of entering school or from information given by the teacher or principal. If the attacks are mild and infrequent the child continues in regular school, is excluded from gymnasium and competitive athletics, may have mental tests given upon recommendation of the examining physician, and is followed more closely than normal children by the nurse and school physician. Children with frequent convulsions or mental deterioration may be excluded from school. Home tutoring may be applied for, subject to the approval of the State. (There are very few of these tutored cases). For the older children instruction in trade or occupational work may be provided at a teaching center if the families are deemed worthy of such aid."

2. Letter of C. Morley Sollery, M.D., the Acting Director of School Health Service of the Board of Education of the City of Los Angeles, California: "The first step in educational placement is expert medical and neuropsychiatric care, which may frequently reduce the number of attacks so that the children can attend regular school. Children with normal intelligence with an occasional attack for the most part attend regular school so as to give them the advantage of normal social contacts. Children with frequent attacks are sent to the school for the handicapped, while those whose attacks are so frequent as to disturb other students in a school for the handicapped are provided with home teachers. Children with subnormal intelligence with an occasional attack may be cared

for in development schools. Mental defectives with epilepsy are not admitted to school but are recommended to State institutions.

"In the City of Los Angeles, fourteen epileptic children are attending regular school; thirteen epileptics are in schools for the handicapped; there are approximately sixty epileptic children with home teachers.

"School physicians and nurses make an effort to see that epileptic children are kept under constant medical supervision, and medical care is provided for the indigent in the various public and part pay clinics of the municipality.."

Arthur R. Timme, M.D., wrote briefly on certain aspects of the epileptic child in school, in the April, 1940 number of the Los Angeles City School District *Health News.* He stated that it is his experience that children are not frightened or upset at the sight of a convulsion, and he states that it is his opinion that it is a false philosophy to spare them such a possibly "terrifying" sight. As for the epileptic child, he states that "there is no better treatment of his whole problem than to expose him to all the experiences of the average child." Dr. Timme goes on in the same vein, points out the ways in which a teacher can readily control the situation when a child is subject only to occasional seizures, and in general indicates that an epileptic child should not be excluded from school merely because it is subject to fits.

Apropos of Dr. Timme's viewpoint, in reviewing the questionnaire returned by principals of the New York City school system in connection with the survey made by this Committee, it is interesting to note the frequency with which a teacher or principal seems to stress the possible untoward effort upon other children in the class of an epileptic pupil, and to emphasize the possible risk of injury to a child in the course of a fit. As a matter of fact, of the 958 children reported, there were less than half a dozen instances in which

any sort of injury to a child occurred in the course of seizures occurring either in school hours or at home. Statistics as to the incidence of injury in the course of seizures have to be evaluated in the light of the particular type of epileptic referred to. In State or other institutions caring for large numbers of epileptics the clinical material consists of individuals with the most severe and frequent attacks and a fairly large incidence of mental deterioration. Such epileptics represent the minority of all people subject to seizures. In private practice, and in dealing with epileptics seen in public dispensaries or out-patient clinics it is rare that one finds an injury of any significance occurring during the course of a fit.

3. Letter of Paul S. Barrett, M.D., Director, Bureau of Child Hygiene, Department of Public Health, San Francisco, California: "Epileptic children in San Francisco are under the instruction of home teachers so long as their mental equipment is normal. Subnormal children are taken care of by the State Institutions.

"The Department of Public Health makes no attempt at treatment and requests for home teachers are made by the private physician or the clinic attended by the child."

4. Letter of Joseph G. Molner, M.D., Director of School Health Service, Department of Health, Detroit, Michigan: "Detroit commenced experimental schools for epileptics in 1935. At the present time there is a special school in which 140 epileptic children are enrolled in classes running from the first to the tenth grades; transportation is offered to the children, who are served with a hot noonday meal at the school.

"Admission to this special school is on recommendation from private physician, school teacher and nurse, and prior to admission children are examined by a physician hired by the Board of Education. In addition to the medical supervisory work mentioned, there has been experimentation with certain therapeutic agents."

Various institutions in the State of New York were written to. There is considerable variation in their policy with respect to the handling of children with epileptic seizures, each institution apparently being influenced by the particular type of child with which it is chiefly concerned. At the Craig Colony children with an I. Q. below 50 are excluded from scholastic activities. At the Letchworth Village classes are available to mentally defective children whenever their I. Q. is sufficiently high to justify training, but since this institution is primarily for the care of mental defectives, its standards can scarcely be applied to the situation in a regular public school system.

Analyses of Questionnaires and The Register of Pupils Receiving Home Instruction June 30, 1939

Summary of Tabulations From Questionnaires

Questionnaires were distributed to the principals of schools during December, 1939. Each principal submitted reports as to children attending class, who were known to be subject to some form of seizure or syncopal attack; reports also were submitted as to children who had been excluded from attendance at school on or after January 1, 1938, because of the occurrence of seizures. Additional questionnaires were sent to the teachers of children under home instruction. Analyses of these data are shown in the following tables.

Table I

Number of Pupils Known to Have Seizures

	Attending School	Excluded from School	Receiving Home Instruction
Number of Pupils	498	229*	231

*Some of these children are receiving home instruction and are included in the home instruction group.

Table II

Classification by Sex of Pupils Having Seizures

	Number of Pupils			
	Attending School	Excluded from School*	Receiving Home Instruction	All Groups
Males	275	131	105	511
Females	223	98	126	447
Totals	498	229	231	958

Table III

Years During Which Pupils Attending Public Schools Had Their Last Seizures

Years	Number of Pupils
1939	292
1938	49
1937	17
1930-1936	28
Unstated	112
Total	498

Note: A certain number of children reported as epileptics do not apparently have a tendency to recurrent convulsions. Diabetics who might have or actually do have insulin shock, a few instances of psychoneurotic episodes, and a few instances of apparently ordinary syncope have been included in the series reported as "epileptics."

Table IV

Frequency of Seizures Among Pupils

	Number of Pupils		
	Attending School	Excluded from School*	Receiving Home Instruction
Frequency			
More than one a month	37	16	107
More than ten a month	13	7	10
Totals	50	23	117

*This question was not asked because principals obviously would have no information about many of the excluded children. Nevertheless, a few reporters volunteered this information.

It seemed to the Committee that statements made to school authorities as to frequency of seizures might be inaccurate. While it would seem likely that frequency would be greater among children excluded from school or under home instruction, some attempt to obtain information from other sources seemed desirable. For this reason, the names of pupils reported as having been examined or under care at the Vanderbilt Clinic (Presbyterian Hospital) were listed and the consent of the hospital authorities was given to review the records of these pupils. The pupils who had attended this clinic

were from every borough of New York City. Also, these children were represented among those continuing in school, excluded from school, and under home instruction. The total of 62 thus represented a really chance sampling of the total number of 958 pupils reported by the school authorities. The information from the hospital records as to frequency of seizures in these children seems to show pretty clearly that the information given the school authorities was inaccurate.

Table V

Occurrence of Seizures in Reporting Period

	Number of Pupils		
	Attending School	Excluded from School	Receiving Home Instruction
Pupils Having Seizures	253	80	153
Pupils Not Having Seizures	123	4	7*
Not Reported	122	145	71
Totals	498	229	231

*Without seizures for one year or longer.

Table VI

Medical Care Received by Pupils Having Seizures

	Number of Pupils		
Type of Care	Attending School	Excluded from School	Receiving Home Instruction
Hospital and Clinic Care	220	81	114
Private Medical Care	208	46	109
Not Reported	70	102	8*
Totals	498	229	231

*One child was reported to have had no medical attention for three years.

No information was given as to adequacy of care. Three children in the entire group were reported as under the care of a Dr. Harry L. James of Chicago, Illinois. This man has for many years advertised his compounds for the treatment of epilepsy, and does his work by mail.

Table VII

Occurrence of Apparent Defective Mentality Among Pupils Having Seizures

	Number of Pupils		
	Attending School	Excluded from School	Receiving Home Instruction
Elementary School Pupils			
I.Q. Less than 80	84*	49**	
I.Q. Over 110	52	5	
Not Stated	113	80	
High School Pupils			
I.Q. Less than 80	7	3	
I.Q. Over 110	9	3	
Not Stated	14	6	

Although a statement as to I.Q. was requested, the information on this point was given in only 13 instances. Examination of the other information given indicated that 46 of the pupils had a definitely defective mentality. Review of the questionnaire listing 231 children showed that the teachers reported poor learning capacity in 109 pupils, and behavior problems in 39 pupils.

*Equivalent to 19% plus.

**Adding pupils in classes for children with retarded mental development, low I.Q. and ungraded classes, totaling 14 pupils, those with I.Q.'s under 80 reach a total of 63 in 171 pupils reported in the grades, or approximately 38%.

Note: By review of questionnaires from two boroughs on children attending school, judging probable mental level by information supplementing whatever was stated with respect to I.Q., in a total of 240 pupils, I.Q. of less than 80 was found in 60, or 25%.

The statements of various authorities as to the appearance of mental defects among epileptics have to be considered in the light of both the number of individuals in a reported series and the type of patient studied.

The failure to report the results of psychometric tests in a sizable proportion of the pupils reported by the New York City school system makes it obvious that the incidence of mental deficiency may be even higher than what was revealed by a study of the questionnaires. In any event, the evidence is clear that epileptic children present a special problem because of the frequency of mental deficiency and any educational experiment must make proper allowance for this complicating handicap.

Table VIII

Intelligence Quotients of Children Having Seizures Who Are Reported Also to Have Behavior Disorders

Intelligence Quotient	Number of Pupils Attending School	Excluded from School	Receiving Home Instruction
I.Q. Less than 80	9	13	
I.Q. Probably Less than 80	4		
I.Q. 80 to 90	7		
I.Q. 91 to 110		5	
I.Q. More than 110	4	1	
I.Q. Not Stated	14	12	39
Totals	38	31	39

While the number of pupils reported as conduct problems is too small to justify any inferences from the above figures, a certain trend seems likely. Although many mentally defective children are docile, and present no behavior disorder, it is of some significance that so large a percentage of mental deficiency was found in the children reported as presenting some form of conduct disturbance.

Table IX

Duration of Home Instruction

Years in Which Home Instruction Began	Number of Children
Prior to 1933 to date	9
1934-1935 to date	25
1936-1937 to date	72
1938-1939 to date	92
Not Stated	33
Total	231

An analysis of the figures shown in Table IX indicates that two-thirds of the children under home instruction on January 1, 1940, have been educated in this manner less than four years. The instances selected from the register of pupils under home instruction on June 30, 1939, (see Table XIV), indicating that this facility did not result in any benefit to the pupils, raises the question as to whether the home instruction program should not have been more strictly prescribed.

Table X

Classification by Grades of Pupils Having Seizures

Grades	Attending School	Number of Pupils Excluded from School	Receiving Home Instruction	Total
Kindergarten	5	1	0	6
1A through 4B	155	52	76	283
5A through 8B	198	74	110	382
Ungraded, Low I.Q. and CRM Classes	35	30	0	65
Other Special Classes*	9	4	1	14
9A through 12 B	63	58	39	160
Not Stated (mostly under 9A)	33	10	5	48
Totals	498	229	231	958

*These include opportunity and certain special classes and placement in other classes for the physically handicapped.

The "normal" age-grade level can be calculated on the basis that a child enters the first year of primary school at the age of six, and completes grammar school education in the grade 8B at the age of 14. Grades 9A to 12B represent the high school level. The continuation school law requires some form of school instruction for practically all children up to the age of 18. The fact that only 160 children were reported by the high schools as subject to seizures can be accounted for on the ground that the high schools are not adequately informed as to the occurrence of seizures in children who have been graduated from the grade schools.

If this information is transmitted to the high schools on the elementary school medical record forms it apparently is routinely filed and forgotten.

The semi-annual report of the Division of Handicapped Children under date of June 30, 1939, was studied. Exactly 200 epileptic children were reported as under home instruction. The following tables represent an analysis of 86 of this group, who showed deviation from the expected age-grade level:

Table XI

Ages and Grades of Epileptic Children Receiving Home Instruction

June 30, 1939

Grade	Ages of Children in Years								Totals
	10	11-13	14	15	16	17	18	19-20 and over	
1A-3B	5	9	2	3	1	3	1		24
4A-5B		1	10	9	7	4		1	32
6A-6B			2		3		3		15
7A-8B				1	3	7	4		7
9A-12B					1	2	3	1	7
Totals	5	10	14	13	15	16	11	2	86

Of 29 aged 17 or more under home instruction 9 are in grades 5B or below.

Table XII

Distribution by Ages and Length of Periods of Home Instruction of Epileptic Children

June 30, 1939

Years under Home Grade	Ages of Children in Years								Totals
	10	11-13	14	15	16	17	18	19-20 and over	
1939-1/1/40		1	3	2	2	1	1		10
1938-1/1/40	2	1	3	1	2	2	1		12
1937-1/1/40	2	6	5	4	5	4	2		28
1936-1/1/40	1	1	2	3	3	8	5	1	24
1935-1/1/40		1	1	1	2	1	2		8
1934-1/1/40				2	1				3
1933 or previous to 1/1/40								1	1
Totals	5	10	14	13	15	16	11	p	86

Table XIII

Distribution of Grades and Length of Periods of Home Instruction of Epileptic Children

June 30, 1939

Period of Home Instruction	Grades of Children							
	1A-3B	4A-B	5A-B	6A-B	7A-B	8A-B	9A-12B	Totals
1939-1/1/40	1	3	2	2		1	1	10
1938-1/1/40	7	1	2				2	12
1937-1/1/40	10	6	3	3	5		1	28
1936-1/1/40	4	5	5	3	2	4	1	24
1935-1/1/40	2		2		2	1	1	8
1934-1/1/40		2	1					3
1933 and previous to 1/1/40							1	1
Totals	24	17	15	8	9	6	7	86

Of those under home instruction from 1936 to date six are in grade 3B or below.

Of those under home instruction from 1934 to date two have not advanced to more than the 4A or 4B grade.

The following instances are cited as bearing upon the policy of the Division for the Physically Handicapped in assignment to home instruction and to continuance under home instruction.

Table XIV

Selected Examples Showing Epileptic Children Receiving Home Instruction Showing Their Ages, Years of Home Instruction Received and Grades Attained

Case No.	Sex	Age	Years under Home Instruction	Elementary Grade Attained
1.	Female	14	2½	4A
2.	"	15½	5	3A-4A
3.	"	16	3½	4B
4.	"	18	2½	6B
5.	"	10	2½	1B
6.	"	18½	3	6B
7.	"	17	3½	5A
8.	"	16	3	5B
9.	"	15½	5	4A
10.	"	15	2	4B
11.	"	13	2	2B
12.	"	14½	2	3B
13.	"	17	3½	3B
14.	"	16½	2½	5A
15.	"	17½	3½	6B
16.	"	12	3½	2A
17.	Male	14	3½	2B-3A
18.	"	15	2½	4A
19.	"	17	1½	2A-2B
20.	"	15½	3	4A
21.	"	15½	4	5A
22.	"	17	4	7A
23.	"	19	3½	4A

In this same report of the Division of Physically Handicapped Children were two instances involving other types of physical handicap, which are mentioned as illustrative of what may occur.

Case 1. Male, aged 9½,under home instruction 4 years, in grade 1A, and suffering from hydrocephalus and spina bifida. It would seem that as a result of four years of home instruction this child had not left the starting post.

Case 2. Female, aged 12½, under home instruction 2 years, in grade 2A. This child was a sufferer from Mongolism. Individuals with Mongolism seldom rate higher than imbecile in intelligence, and a large proportion of them die before reaching maturity.

Eighty-six of these epileptic children were of an age and grade in school suggesting some definite degree of intellectual impairment. There were ten children over fourteen years of age who were in the first, second, or third primary grades (grades 1A to 3B); there were twenty-one children over fourteen years of age who were in grades from 4A to 5B; there were twelve children over sixteen years of age in grades 6A or 6B; there were eleven children over seventeen years of age in grades from 7A to 8B.

Forty-two of the 86 children were still less than sixteen years of age.

Forty-one of the 86 children have not reached the 5A grade Regardless of age distribution in this sub-group, it is indicated that nearly half of the number regarded as probably defective mentally are not likely to be able to reach the 8B grade and it is a legitimate question to ask whether there is going to be anything like an adequate return for the time and effort expended in attempting to teach the standard curriculum to these children.

Results of Visiting Program and Comments
Information Obtained from Visits to Pupils

I. *Statistical Analysis*:

Although a total of about 260 pupils were visited, exigencies of time made it inconvenient to submit all the reports to a complete statistical analysis. The first 175 reports received were analyzed for information which seemed to be of particular importance, with the following results:*

1. Medical supervision reported as satisfactory .....68 cases, about 38%
2. Medical supervision reported as unsatisfactory .....28 cases, about 16%

One child in a high school had not seen a physician for five years, although grand mal attacks occurred on an average of once a week.

3. Medical supervision, character uncertain .....28 cases, about 16%
4. Medical supervision not reported .....51 cases, about 30%
5. Learning capacity of pupils reported as poor .....87 cases, about 49%

In the pupils under home instruction, poor learning capacity was reported in 60% of the cases.

In this group, reported as having poor learning capacity, are included all children with definite mental defect as well as those with apparent normal mentality but difficulty in learning.

*The reports which were received later were examined and inspection of them did not indicate any change in trends.

6. Presence of physical handicap:

   a. Physical handicap having some causal connection with the epileptic seizures .....34 cases, about 19%

   b. Physical handicap independent of the epileptic seizures .....30 cases, about 17%

   Chorea, refractive errors of vision, orthopedic defect without nervous system involvement and rheumatic heart disease, are illustrations of physical handicaps regarded as not causally connected with the tendency to epileptic seizures.)

   c. Objective signs of organic disease of the central nervous system ..34 cases, about 19%

   (In some of these children the organic nervous disease was not apparently connected.)

   d. Cerebral trauma possibly the cause for seizures (Birth injury included) .....12 cases, about 7%

7. Active coordination and cooperation between teachers and physicians in charge of pupils .....13 cases, about 8%

In the great majority of instances, the pupils did not seem to require any continuous exchange of information between teacher and physician. In several instances, the teacher in charge of a pupil was unaware of its tendency to seizures, although the school principal had the information.

Two boys were assigned to courses in aviation mechanics in a vocational high school: apparently the instructional staff did not recognize that such an occupation was distinctly hazardous to these pupils, and that they could not possibly get work in this field if an employer knew of their physical handicap.

8. Coordination between teachers and home of pupil reported as poor .....9 cases, about 5%

In these cases, the fault usually lay at the door of the parents, who were apt to neglect not only the child's medical needs, but failed to cooperate with respect to the educational efforts of the teacher.

9. Poor economic environment .....13 cases, about 8%

10. Home environment emotionally handicapping .....11 cases, about 7%

11. Pupils reported as presenting some behavior problems .....9 cases, about 5%

This percentage is about half that which was revealed from study of the questionnaires. The discrepancy is of no real significance because the visiting program excluded most of the individuals reported as presenting a behavior problem.

12. Diagnosis of epilepsy uncertain or in error .....35 cases, about 20%

The incidence of uncertain or erroneous diagnosis is higher than occurred in the questionnaires, because pupils about whom diagnosis was uncertain were specially selected for information which would be gained from a visit by a physician.

In a number of instances, seizures of any form were denied. Eight children were subject to syncopal attacks or convulsions as a complication of the insulin treatment with diabetes. Three or four children apparently were subject to tantrums or hysterical seizures; one child was subject to syncope because of organic heart disease; a few children apparently suffered from chorea.

An analysis of the records of 62 pupils who have been examined or treated at the Vanderbilt Clinic or other units of the Columbia-Presbyterian Medical Center revealed:

1. Frequency of seizures more than once a month .....39 cases, about 62%
2. Frequency not more than eight attacks a year .....18 cases, about 28%
3. Frequency of seizures once a year or less .....3 cases, about 5%
4. Frequency not stated or seizures denied .....2 cases, about 3%
5. Occurrence of brain injury at birth .....5 cases, about 8%
6. Seizures following central nervous system infection .....6 cases, about 10%

It is of interest that in many of these children seizures were reported as occurring with greater frequency than their school records revealed.

Additional Comments

The work of this committee may be subject to criticism on the ground that its members have not been provided with detailed or accurate information from the Division of Physically Handicapped Children. It is quite obvious that if this Division were in the possession of adequate records and statistical reports, the work of this Committee would have been simplified. The interview with the Director of the Division and the Associate Superintendent in charge of the Education of the Handicapped, was arranged several days in advance. The chief officers of the Division of Physically Handicapped Children have been familiar with the fact that a survey of the work done by their Division has been carried out by a number of subcommittees, each dealing with a particular type of physically handicapped children. The members of this Committee make no pretense at being expert educators. However, it is not necessary to be an educator to judge with reasonable accuracy whether physically handicapped children are classified in accordance with any accurate medical or psychiatric standards, nor does one have to be an educator to judge whether elementary medical and psychiatric principles are systematically and efficiently maintained in the attempt to provide special teaching facilities for children suffering from some form of physical handicap.

Allowing for the inclusion of really non-epileptic children among the total of 958 individuals reported, approximately 925 can be regarded as subject to one variety or another of recurrent epileptiform seizures. With approximately one million one hundred thousand children enrolled in the public school system, between the ages of 6 and 21 (only a small percentage are over 18), epileptic seizures were reported in less than one tenth of one percent. If one were to assume that the public school system reported all of the pupils actually subject to recurrent epileptiform seizures, and also that individuals under the age of 18 represent 50% of all persons subject to such

seizures, then the disorder might be estimated as occurring in about one in 500 individuals of the total population. It is perhaps unsafe to place much reliance upon this calculation. In particular, caution is required because there are children in the public school system who are not known by school officers to be subject to seizures. Bearing on this point is the fact that information in the questionnaires as to the frequency of seizures was frequently inaccurate, and that it was fairly common to find that parents reported to physicians of this committee visiting the pupils that the seizures were more frequent than principals reported them as being.

It is not necessary to demonstrate by statistics the well known tendency of people to minimize symptoms or disability if knowledge of them were to result in deprival of privileges or to be contrary to their interests.

The enactment of the Education Law and the creation of boards of education and school districts throughout the State were legislative acts in obedience to the mandate of the Constitution that a common school education shall be provided for all children. In the light of the Constitutional mandate, it is reasonable to assume that a child is entitled to an education by which it can benefit and it is also reasonable to assume that such was the purpose of the legislature as expressed in the following sections of the Education Law:

In Article 23 of the Education Law (entitled "Compulsory Education"), there is the express provision that

> "A minor***** who is feebleminded to the extent that he is unable to benefit from instruction, shall not be permitted to attend*****" (Section 624, Subdivision B)

Article 39-A (entitled "Home Teaching in Special Classes") provides

> The Board of Education**** shall have power to furnish suitable educational facilities for *physically*

> handicapped children by means of home teaching, transportation to school or by special classes. Where there are 10 or more *physically* handicapped children such Board shall establish such special classes**** (Section 1020, Subdivision 2)

We have italicised "physically" in the foregoing quotation as a means of pointing out that the legislature did not provide the educational facilities for those who were so mentally handicapped that they could not benefit by the education; the legislature limited such educational provision "for physically handicapped children."

With this emphasis in mind, the purport of the following language contained in the same section of the Education Law may be readily understood:

> The need of the individual child shall determine which of such services shall be rendered**** such Board shall establish such special classes as may be necessary to provide *instruction* adapted to the mental attainments and physical conditions of such children. (italics ours)

In the light of the foregoing provision of the Education Law of this State, the Board of Education of the City of New York adopted the bylaw that:

> A pupil**** who is so feebleminded that he cannot benefit from instruction, may be suspended from attendance****. (Section 67, Subdivision 11)

It would seem reasonable to say that the State laws intended that the officers of the school system should exercise good judgment in determining whether or not an individual child was likely to benefit from the instruction available, and to give first consideration to children who are reasonably certain to benefit. What does one mean by the word "benefit"? It would seem to this Committee that the term implies that the pupil possesses the ability to understand and to retain what is taught—whether or not the knowledge is ever put to remunerative use.

Merely taking up somebody's time and keeping a pupil out of mischief, or taking over some one or more of the proper responsibilities of parents is not providing an education, as one generally understands is the province of the public school system. It may be charity and it may be kindness to provide transportation to a special class, or to send a special teacher to the home, in the case of a child whose physical handicap is permanent, perhaps progressive, and will result in death before the attainment of adult years. It may ease the grief of parents of a child who is a burden in the home and who is seriously mentally defective, to go through the motions of providing educational facilities which can be grasped only by a child of normal intelligence. But with the handicap of a limited amount of funds, it would seem to this Committee that if society is going to benefit and if educators are going to contribute any constructive information, financial resources at the disposal of the Department of Education should be expended by preference upon those of the physically handicapped who can be expected to yield a return to society in some manner or through education reduce the cost to society of the burden of their care. In fact, presumably as argument for the expansion in the Division, instances are cited of individuals who were made useful citizens as a result of special teaching facilities. In any event, the Division of Physically Handicapped Children, which has been in existence for about twenty years, can justify its existence only if it is so organized that the children under its supervision are intelligently handled and if there is an accurate and competent continuous study and reporting upon the results of policies in force.

In considering the disposition to be made of a child suffering from recurrent epileptiform seizures, a number of factors have to be taken into account. Assuming that the child has no other physical handicap and no mental defect, the character and frequency of seizures is the first item in determining whether or not the child may interfere with the education being provided for other children in class. From

the standpoint of the school system, exclusion from regular class may be necessary in the case of a child whose condition or behavior interferes with the purpose of the class. From the standpoint of the child subject to seizures, their frequency and character may be such that he is incapacitated often enough so that he cannot benefit from regular class instruction. In any given instance, decision as to exclusion because of the character and frequency of seizures should depend upon reliable information obtained from parents or guardians and the physicians who have examined the child. The school system should avoid premature action or a hasty diagnostic assumption, and should recognize that one epileptiform seizure does not mean "epilepsy." A seizure may be symptomatic of some other physical disorder, the nature of which can be determined only after medical investigation.

The pupil with mental retardation or definite mental deficiency may be subject to epileptiform seizures. The learning capacity of such a child is not determined by the occurrence of epileptiform seizures but by the mental defect, which is the basic handicap. Most school systems recognize that the pupil with a definite mental defect has to be classed as a psychological rather than a physical problem—at least as far as its educability is concerned. Exclusion from regular class in such instances should be on the basis of mental capacity rather than the occurrence of epileptic seizures. Assignment to home instruction should likewise be determined by the learning capacity of the child as judged by its mental development rather than the occurrence of epileptiform seizures.

A certain number of epileptic children exhibit behavior disorders and are disciplinary problems. In the cases reported as a result of the questionnaire submitted to the public schools of New York City, a large proportion of the epileptic children who were disciplinary problems were definitely defective mentally. Thus these children possessed a multiple handicap, and exclusion from school would in their cases be determined by their behavior rather than the occurrence of seizures.

Additional Comments

With respect to the epileptic children reported under home instruction as of June 30, 1939, analysis of those reported on home instruction on the returns from the questionnaire (approximately February 1, 1940) may be of interest.

While it is recognized that the scanty information submitted in response to requests for information on certain points would expose one to serious error in attempting to select the children with probable mental defect, the attempt was made nevertheless. Of the 231 children reported, 46 were judged to have a definitely defective mentality—approximately 20%. The letter of the Assistant Director under date of April 16, 1940, states that approximately 26% of these children (the 231 children mentioned above) are "below borderline intelligence." It will be seen, therefore, that the results of the analysis of the questionnaire were not very far off, and certainly did not make the mistake of over-estimating the percentage of those with probable mental defect. With respect to the problem of attempting to read between the lines of the questionnaires apropos of children still in school, and also those reported as excluded from school, and including children whose I. Q. ratings were not definitely stated, it would seem that the clinical judgment of the individual who surveyed the questionnaires was reasonably dependable.

Statistics as to the incidence of mental deficiency in epileptics will naturally vary with the source of the clinical material studied. The patients in institutions for epileptics are by and large those who are most seriously afflicted. What is true of the institutional group will probably not hold true of individuals less seriously affected, and who are able not only to live at home but engage in competitive and remunerative employment.

The New York State Craig Colony* reports that only

*Davenport, Charles B., "Racial and Geographical Distribution of Epilepsy," Association for Research in Nervous and Mental Disease, 1931, Vol. 7, pages 117-134.

14% of the inmates were of normal mentality; the same authority stated that 65% of non-institutional epileptics have normal mentality. Epileptics who are severely afflicted are more apt to deteriorate mentally than other epileptics. These points should be kept in mind in attempting to determine what educational facilities are feasible or likely to lead to accomplishment in epileptics with frequent seizures and a definitely established mental deficiency. It is safe to assume that such individuals can never be expected to continue in remunerative employment; moreover, after they have completed whatever education opportunity has provided, they will either forget what has been learned or fail to use it—unless perhaps some simple manual occupation has been taught.

On the assumption that the tendency to repeated epileptic seizures is symptomatic of some brain disorder or defect, one would be interested in the incidence of objective evidence of central nervous system structural pathology. Lennox and Cobb* found signs of central nervous system pathology in 15% of their non-institutional series. Analysis of the questionnaires submitted with respect to children under home instruction as of February 1, 1940, showed the occurrence of organic cerebral lesions in 10% of the cases.

Following are quotations from material in an abstract of reports submitted to this Committee by the Division of Physically Handicapped Children:

1—During 1931-1932 a total of 595 epileptics were known to the Department of Education; 58 were receiving home instruction.

2—A statement was made implying that education and training of epileptics might prevent their eventually becoming State or City charges, at a cost annually greater than that necesary to provide educational facilities.

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*"Epilepsy", Medicine Monographs, Volume 14, Williams and Wilkins, 1928, p. 368.

3—It is stated, "An experimental study has shown that many epileptics improved physically during the period of home instruction but that assignment to a regular class usually unstabilizes . . ." We feel that while it is generally recognized that contented epileptics have fewer fits, and that contentment in general is of benefit to one's health, it is extremely difficult for a physician experienced in disorders of the nervous system to believe that three sessions a week under a home teacher has any specific effect upon an epileptic child's health. It is not unreasonable to suspect that if there had been no home instruction provided, the results would have been the same and that if any credit were to be apportioned, one would have to investigate into not only the child's routine but whether or not active medical supervision played a part.

4—The figures for epileptic children receiving home instruction from 1931 to 1937 are shown in Table XV:

Table XV

Number of Epileptic Children
Receiving Home Instruction

Year 1931-1937	*Number of Children*
1931	94
1932	58
1933	43
1934	37
1935	103
1936-1937	220

The last two years represent the results of an increased budgetary appropriation for home instruction.

5—It is stated that it is very difficult to obtain adequate information regarding the number of epileptics, and that the only children studied are those who show by attacks in school the need of investigation.

Considering the fact that many administrators have more to do than they can well handle and that apparently minor matters are omitted or forgotten, the requirement for an annual report from the principal of every school on children known to be subject to seizures would have given more complete information. Under the present system many of the children reported are apt to be lost sight of. There were a number of instances of principals submitting questionnaires which stated that children had been transferred to some other school anywhere from three months to a year or more previously—yet in practically every instance the new school in which the child enrolled failed to report the existence of the child as subject to seizures. One would expect that the children subject to epilepsy who had graduated from the grade schools would be known to the principals of whatever high schools enrolled them. The returns from the questionnaire indicated that such is the exception rather than the rule. Thus, if the Department of Education is to make a serious attempt to maintain a record of epileptic children, a better system of reporting is necessary.

6—It is stated that the Division of the Physically Handicapped Children makes an effort to secure a complete neuropsychiatric study of children reported as epileptics.

Since it was not feasible for this Committee to inspect the medical records in the possession of the department, an opinion as to the execution of policy has to be based upon indirect evidence. In visits to children under home instruction, it seemed quite clear that the Department of Education contented itself in a great many instances with nothing more than a brief statement from a physician that the child had seizures, and after the child was placed on home instruction there was no systematic effort to learn either from a family physician or a clinic anything about the child's progress under medical supervision. The routine reports submitted by the teachers of these children were of no medical value whatever.

As for the statement that treatment is arranged for neglected cases in proper clinics, the evidence is very strong that this policy is not carried out. There were a number of children who were regarded by the physicians visiting them as receiving inadequate or haphazard medical attention. Whether the Department of Education should as a matter of principle or policy insist upon any particular standard of medical supervision involves sooner or later a possible infringement upon the rights of the individual. Perhaps an inexpensive and simple way of encouraging parents in providing more adequate medical attention would be the insistence that a given child must submit a certain type of medical information before it may be placed on the list of eligibles for home instruction, and then requiring reports from the clinic or attending physician every six months—these reports to be on forms supplied by the Department of Education and given to the parents who will be responsible for getting the needed information.

With respect to the implied coordination between the teaching personnel and physicians, the results of the program of visiting epileptic children would indicate that it is exceptional to find that the teaching personnel have any contact whatever with physicians, or know in the slightest degree what a physician might conceive as important with respect to the educational, recreational, and other requirements of the child.

It is a fair criticism to say that the majority of physicians dealing with epileptic children limit their interests to the purely medical problem and perhaps neither know nor care anything about the educational problem. This would be particularly true of physicians engaged in general practice and untrained in neurology and psychiatry.

If one were to consider the time and energy, and the personnel involved, in an effort to extend medical responsibility to all the conceivable economic, sociological and educational aspects of the problem of epilepsy, it should be easy to see why the physician taking care of an epileptic child must by necessity limit his endeavors.

7—It is stated that all epileptics receive psychological examinations.

The Assistant Director's attitude about psychometric tests appears elsewhere in this report. If all the epileptics referred to the department receive psychological examinations, where these tests are given is not clear. Group tests given in class are recognized as only approximations of what can be measured by individual tests in the hands of a thoroughly competent psychologist. There are only a few qualified psychologists attached to the Department of Education, and the figures given by the physicians attached to the Bureau for Children with Retarded Mental Development would indicate that these facilities are not used. A study of the records of the reported epileptics who have been treated in several of the large clinics in New York City shows that psychometric tests are not routinely done. In fact, the Assistant Director stated in the interview on March 19, 1940, that psychometric tests are performed routinely for only those children whose records indicate that there may be a measurable mental deficiency. This Committee agrees with the principle that every epileptic should receive an adequate psychometric examination, at least in every instance where an epileptic is being considered for home instruction. The Committee also believes that psychometric tests should be repeated at suitable intervals on every epileptic child under home instruction. Instances were found in the visiting of epileptic children, showing that not only those still in regular class, but those under home instruction were deteriorating mentally, and that psychometric tests have been performed in clinics two or three years or more after the date of psychometric examination known to the Department of Education—but that as far as is known the results of the later tests were not transmitted to the Department of Education.

A decline in intelligence level would be important with respect to disposition of the individual child. Routinely repeated psychometric tests would contribute to a proper record

system. The Department of Education should be in a position to provide personnel for the psychometric examination of children being given special forms of instruction, and should not depend upon an indeterminate number of outside agencies. In view of the fact that educators and psychologists familiar with psychometric tests realize that in equally competent examiners there is bound to be a certain amount of the personal equation, accuracy and continuity are best served by having all the testing in the hands of the same examiners.

8—It is stated that all of the epileptics graduated from the elementary schools have been adjusted to self-support.

This Committee questions the accuracy of this statement, in view of the study of epileptics under home instruction and the data of the 86 children selected from the report of the Division of Physically Handicapped under date of June 30, 1939. This Committee may be unfair in its assertion, but unless the Division has reliable information, which would offset the experience of this Committee, skepticism is justified. There is a serious obstacle in the New York State Workmen's Compensation Law. The interpretations apropos of epileptics who sustain an injury in the course of a seizure make it very difficult for a known epileptic to obtain any employment. What chance to "adjust to self-support" either in some simple form of office work or a so-called trade is there for an epileptic with inferior intelligence who lacks the ability to make acceptable grades in school or complete the elementary grades? Nevertheless, such children are "graduated" every year from elementary schools.

As far as this Committee is aware, there are no reports available as to the experience of industry with individuals suffering from epilepsy. The first requisite for a competent study would be reliable information as to the number of epileptics engaged in remunerative employment, and the kind of work they do. There are certain occupations in which the duties do not present any hazard and do not tend to alter the fre-

quency of seizures. With respect to the administration of Workmen's Compensation laws in various states, the epileptic presents a potential financial hazard to the organization responsible for paying disability benefits. It is thus obvious that an individual subject to epilepsy, and engaged in an industry which is covered by Workmen's Compensation insurance, is almost certain to conceal his disability from the employer.

9—In the description of the educational program for children in special classes and under home instruction appears the following statement:

"Parallel with the academic course, hand training is conducted for the skillful use of tools, study of form, color and construction in the primary grades and in the grammar grades and junior high school grades for instruction in the fundamentals of various industries, trades and industrial arts by the Inspector of Industrial and Placement Work. This instruction provides not only an opportunity for expression for the motor-minded child which enables his teacher to study his ability for occupational training and placement later, but it is reflected in his improved motor ability and coordination in relation to the academic program, particularly for the crippled child."

It would seem to this Committee that the above quotation is not supported by facts. The Bureau for Industrial and Placement Work has nothing to do with epileptics; in the visiting of epileptics still in school, the Committee found no corroboration of the statement that hand training is conducted for the skillful use of tools in the primary grades or that instruction in the fundamentals of various industries or trades is routinely provided for epileptics in the grammar grades and junior high school grades. No such instruction is available for every child enrolled and the Committee found no evidence that the vocational high schools have any program or pay any particular attention to the problem of the epileptic.

10. Each child under home instruction has three sessions a week with a teacher, each session for one and one-half hour. It is the custom to change teacher assignments when a child changes residence, or when the route traveled by a teacher makes a change convenient. The teachers doing home instruction work have to deal with children varying widely in age and attainment.

Members of this Committee who interviewed teachers doing home instruction were favorably impressed with the sincerity of the teachers they met. However, if it is fair to assume that the teaching of a handicapped child involves really special experience and training, then it would be appropriate to assign as teachers those whose records show the needed special qualifications. It may be that the funds available do not permit the engagement of such fully qualified instructors. If such is the case, then it must be recognized that the accomplishments of the Division are handicapped by the relative inexperience of many of the teaching personnel assigned to home instruction.

There was apparently inadequate or at least unsystematic procedure with respect to correlation between character and frequency of seizures and asignment to and continuance under home instruction. One pupil, aged 18, was dismissed from regular classwork at the age of 14, having reached the 7A grade. Home instruction had been given for four years and the pupil advanced only one year during this time. Seizures were reported to occur about four times a year and have never been more frequent. One pupil had petit mal seizures on the average of twice a week, but was kept on home instruction for three years. One pupil aged 16 was in the 4A grade and seizures occurred not oftener than once a year. Another pupil with occasional petit mal seizures was in 6A at the age of 16. Another pupil aged 18 was allowed to swim and play sandlot baseball—although presumably his seizures were of such character that he could not attend school. Other examples of the policy as to assignment to home instruction are quoted above

in excerpts from the departmental report under date of June 30, 1939.

The following comments were made spontaneously by a number of the physicians who assisted in this survey. They are quoted because the Committee regarded them as representative and of practical interest. In connection with the organization of this Committee and the work done by the physicians who assisted in the visiting program, it should be kept in mind that each physician worked independently in carrying out assignments, and the physicians doing visiting work were in no manner informed as to the knowledge or opinions held by other members of the Committee.

1. There is no provision made for the proper exchange of information between physicians, parents and school authorities.

2. Occasionally parents express opposition to having their children examined by physicians representing the Department of Education. In a number of instances this opposition was motivated by fear that the physicians would report adversely to what the parents conceived to be the interests of the child.

3. No provision is made for intelligent handling of the problem of vocational training and placement. In a number of instances, mental deterioration was suspected by the examining physicians and corroborated by repetition of psychometric tests made at various clinics. The school authorities were apparently unaware of these facts.

4. Too frequently, the decision to exclude the epileptic child from regular class is based upon individual prejudice of a teacher or principal.

In a noticeably large proportion of the children with definite mental defect it is this handicap rather than the character or frequency of seizures which seems to determine

the exclusion from regular class as epileptics. Such children should be classed educationally as mentally defective. (These comments corroborate the inferences to be drawn from the statistics as to frequency of mental defect in the pupils reported as subject to seizures).

5. Of medical rather than educational interest are the children who either are not definite epileptics, or whose seizures have apparently stopped, for periods from one to as long as ten years.

6. The physician in charge of the visiting work in the Borough of Manhattan reported the following observations:

a. Epileptic children are not receiving adequate medical care. (It should be kept in mind that "adequate medical care" is a very elastic concept. Private patients with epilepsy are prone to be haphazard about consulting physicians and they frequently fail to live up to or follow the advice given. Competent physicians will vary widely in their ideas as to what examinations and treatment measures are indicated in a particular patient. Finally, as long as a patient is entitled to decide whether or not to follow a physician's advice, there will always be occasion for a meticulous or conscientious physician to feel that a sizeable proportion of the population is not having or is deprived of adequate medical care).

b. Special classes for epileptics are not indicated or desirable.

c. Epileptic seizures in classrooms do not constitute trauma (that is, an undesirable experience) to other children.

d. Some principals of schools are antagonistic toward any medical investigation and some of the school workers were uncooperative with the doctors engaged in the survey.

The frequency with which some physical defect, not apparently connected with the epileptic seizures, was found in these children has certain implications. First is the effect of such defect upon their general physical and mental efficiency. Next is the problem of determining whether the persistence of such defects indicates that the parents are ignorant or deliberately neglectful with respect to needed medical attention. One hears a great deal about the correlation between the below-par child, the underprivileged class, and poverty. Many physicians who practice among the lower economic groups are perfectly familiar with the fact that the intelligence and attitude of the parents determines their behavior and that one finds well cared for and healthy children when the family resources are intelligently expended. This is not a new phenomenon in human nature and a reading of the history of the English Poor Law covering the past five or six centuries suggests that unintelligent behavior is often a manifestation of biological defect rather than environmental stresses. Any effort on the part of society to correct undesirable health conditions will be futile unless there is either intelligent cooperation upon the part of the parents or a dangerous totalitarian sort of discipline applied in spite of the ignorance or poor cooperation of the parents.

With respect to the children in this study visited at home and found to live in squalid surroundings, and in dire poverty, there was apparently no effort made to secure the assistance of available hospitals and welfare agencies. As for the children whose environment was undesirable from the purely psychiatric standpoint, there was no evidence that welfare agencies, the special departments of the educational system, or the courts were consulted. In one instance a very obviously neglected child was reported as living with alcoholic parents. In another instance, the school authorities found it necessary not only to feed but to clothe and even attend to the toilet needs of the child. Such situations have perhaps no direct bearing upon the adequacy of medical care of the epileptic seizures, but they do en-

ter into the general problem of mental or physical handicap and the educability of children.

Obviously, special class or home instruction is not the solution for situations which require ordinary medical or sociological corrective measures. As for the epileptic child whose learning capacity is handicapped by a below-par general physical condition, the best that the school system can do is to provide a reduced or limited schedule of regular class work during the period of physical handicap, and to present as strongly as possible to the parents the need for corrective medical care.

Teachers, principals and assistant superintendents refer to the idea that an epileptic child presents a hazard either because of the circumstances under which a seizure may occur, or as a potential source of panic to other pupils if a seizure should take place at the time of some school emergency. This Committee feels that such fears are ungrounded and largely the product of ignorance. The mathematical probability that a major seizure will occur during a fire drill or some actual school emergency is exceedingly small. Naturally, a child subject to major seizures or severe petit mal attacks who has such symptoms as often as once a week during school hours would justify some concern on the part of the school authorities. As a matter of fact, the returns from questionnaires indicate that such children are excluded from attendance at a school.

The mathematical probability that a seizure might be a hazard can only be measured roughly. However, the attempt has been made on the bases of the following factors:

1. Frequency of fits
2. Average duration of a fit
3. Frequency of fire drills
4. Length of fire drill

5. Length of school year
6. Waking hours
7. Length of school day

The probability that an epileptic child will have a fit during a fire drill is a product of these two fractions:

a. Proportion of waking time spent in fits.

b. Proportion of waking time spent in fire drills.

The computations are based on a period of a week, since there is assumed to be one fire drill per week.

The chance that any one out of the approximately 1000 epileptic children will have a fit during fire drill in any week is about once in eight years.

One can speculate as to the degree of excitement produced by a fire drill and the possibility that the excitement might precipitate a fit. A few epileptics may have their fits occasionally precipitated by an identifiable sudden and intense emotional reaction. But routine fire drills are quite a different matter and the experience of this committee indicates that the educational authorities need have no concern about the fire drill "hazard."

Conclusions and Recommendations

Conclusions

1. The Department of Education is incompletely informed as to the total number of children enrolled in the New York City Public School System who are subject to recurrent epileptiform seizures.

2. Of those known to the Department of Education, a definite degree of mental deficiency was present in over 20% of the cases, and the percentage of mental deficiency is definitely higher in the groups of children excluded from school or being educated under the home instruction plan.

3. Although the Department of Education has on paper an organization which might result in efficient handling of the medical and educational problems presented by this special group of children, there is lack of coordination in the various divisions of the Department of Education.

4. The Division of Physically Handicapped Children, which has had a program for those subject to epileptiform seizures, is apparently ill informed as to the facts which the survey of this Committee revealed, and the reports of this Division imply a state of affairs which the work of this Committee does not corroborate.

5. The criteria for diagnostic classification and for teaching assignments are apparently inefficient and haphazard in many instances.

> Individual standards of teachers, principals and assistant superintendents apparently often determine the decision as to the exclusion of a pupil from school. Mental deficiency and other physical handicap seem to determine what should be done rather than the nature and frequency of seiures. Both the assignment to and continuance of pupils under home instruction are often dictated by other than medical reasons.

6. No systematic, intelligent consideration is given to the problem of vocational training and placement of pupils suffiering from recurrent epileptiform seizures.

7. The occurrence of epileptiform seizures, without other physical or mental handicap, does not justify exclusion of the pupil from regular class attendance unless the seizures are so severe, so frequent, or so protracted that their occurrence in a classroom interrupts and retards the instruction of the other pupils.

> Most of the children subject to seizures should lead as normal a life as possible, and their segregation is not only unnecessary but apt to be harmful. With respect to the effect of a seizure upon other children who may witness it, good sense on the part of the teacher will perhaps serve to make the experience profitable to those who witness the attack. It should be kept in mind that children of school age may witness such seizures outside of regular class hours, and that no one would propose the total isolation of a child merely because it is subject to epileptic seizures.

8. If a child's seizures are of such character that attendance in regular class is deleterious to the child's health, or a definite handicap to the rest of the class, teaching under home instruction is the best and most practicable method to adopt.

9. The number of children in the New York City Public School System whose handicap is limited to frequent or severe seizures is so small that it is economically unsound to provide any special school or other institution where medical attention and education could be provided. Some of these children, however, would benefit from more intensive medical study and treatment.

10. Children who have seizures but are definitely defective mentally should not be regarded from the educational standpoint primarily as problems in epilepsy, but should be dealt with in accordance with the provisions made for the instruction of those with definite mental defect.

> Children with the double handicap of mental deficiency and seizures which justify exclusion from any class work will not benefit from teaching under the home instruction program, and should be excluded from instruction. Their care and education in one of the institutions for mental defectives is the only sensible alternative.

Conclusions

11. The incidence of organic brain defect, mental deficiency, and physical defect of other organs, which may or may not be causally connected with a tendency to epileptiform seizures, was reasonably within the areas of what might be expected in view not only of the presumed nature of the tendency to seizures but reasonably reliable statistics based upon work of accredited experts.

12. It is the feeling of this Committee, that nothing is really served by avoiding facts and that the word "epilepsy" need not be replaced by a term or terms which in a short time will lose the deceptive quality due to their novelty.

> Apart from the purely medical or educational aspects of the problem, one must consider the sentiments of lay people in general as to what is meant by the term "epilepsy." While there are wide ranges of frequency and severity of seizures, the diagnostic label has connotations which serve to the disadvantage of a sufferer. As a consequence, medical nomenclature has dabbled in attempts to devise terminology which will perhaps avoid the frequent disadvantages in the use of the word "epilepsy." This Committee feels that most people realize that a fit is a fit, no matter what fancy term may be devised to conceal the real essence, and that it is better in the long run to be frank and direct and reserve one's ammunition and influence for the purpose of convincing the laity that the possible tendency to recurrent epileptiform seizures is not synonymous with the really progressive and malignant disorder which occurs in the minority of cases.

13. While it is generally recognized that sudden emotional excitement or emotional tension may at times seem to precipitate a grand mal epileptic seizure, it is the opinion of this Committee, based not only upon their study of the problem of the Department of Education, but their general experience, that this factor is of little or no importance with respect to the school system.

14. The great majority of the children reported were under medical care, the adequacy of which depended considerably upon the parental attitude and cooperation with physicians.

Recommendations

Examination and Classification

1. *Whenever a teacher or principal of a school becomes aware that a particular child may be an epileptic, the school authorities must be supplied with adequate and reliable diagnostic information.*

From the school administrative standpoint, a child known to be subject to any episodic and transient loss of mental and physical control presents a very definite problem of management no matter what the cause or nature of such an episode may be.

The information which is needed to enable a diagnosis must be determined by medical officers. Whether such medical personnel is attached to the Department of Education or the Department of Health depends upon the particular administrative organization. Such medical officers should determine the procedure to be followed, and devise report forms which may be used by physicians and school administrative officers.

2. *As a result of the information obtained apropos of any pupil in question, the medical officer should be responsible for making a diagnosis and determining whether or not the child is medically fit to continue in school.*

If there is medical ground for exclusion of the child from class work in a school, the probable duration of exclusion should be estimated as accurately as possible. Also, it should be stated whether recommendation as to exclusion or continuance in school is based upon the existence of physical and mental defect *apart* from whatever handicap may be estimated as due solely to the tendency to episodes of loss of physical or mental control. In the case of children with multiple handicaps including epilepsy, educational treatment should take into consideration the complex of conditions rather than be based merely on their classification as epileptics.

In this way, final classification will be definitely more accurate than the methods which have applied hitherto in the New York City Department of Education.

3. *Care and tact should be exercised to make certain that the parents of a pupil may have the privilege of selecting the physician or physicians who will supply the information required by the Department of Education.*

The occasional instance when a private physician may feel constrained or inclined to conceal relevant facts can to a great degree be obviated by the use of a properly comprehensive reporting form.

4. *More extensive use should be made of the special divisions affiliated with the Department of Education for the purpose of special psychiatric and psychological examinations of pupils.*

5. *The results of any medical and psychological survey of the pupil should be kept on the child's school health card and also in a central file or registry and correlated with partial or complete re-examinations made at later dates.*

Decision as to Exclusion from School

6. *If either medical or psychological examination lead to a decision that a child should be excluded from school, temporarily or permanently, educational officials should accept and abide by this recommendation, subject, however, to additional medical evidence which would justify a changed ruling by the medical examining officer. The occurrence of epileptiform seizures per se should not necesarily exclude a child from school unless their frequency, severity or duration interferes with the regular work in class.*

Periodic Checks

7. *If a child has been excluded from school temporarily for medical reasons, re-examination at the end of the stated period should be conducted by medical officers.*

If a child is allowed to continue in school subject to medical check-up, proper medical information should be obtained at the intervals indicated for the particular child, and the situation reviewed and recommendations made from time to time.

If an epileptic child is excluded from school, solely because of epileptic seizures, and placed under individual home instruction, adequate medical reports should be submitted at least every three months, and if a situation should arise which shows that the child is unfit to receive any form of instruction, appropriate action should be taken immediately.

8. *All epileptic children continuing under any form of instruction should have competent psychometric examinations done at least once a year. Mental deterioration should automatically require revision of the pupil's curriculum.*

Transfer of Children

9. *Transfer of a child to and from school and home instruction should be prompt, though it may be undesirable to resume regular class work after the middle of a school term.*

While there may be administrative reasons for changing instructors of a child under home instruction, the special difficulties of adaptation between teacher and pupil make it desirable that such changes occur not oftener than once a year, so that the teacher assigned to a child at the beginning of the fall term should continue until the end of the spring term.

10. *Home instruction should not be made available to epileptic children with definite mental deficiency.*

The attempt to instruct a mentally defective child in the regular curriculum, with a teacher devoting four and a half hours a week to the child, appears to accomplish little or nothing, if one is to place any value upon the age-grade levels reported by the New York City Department of Education.

11. *There should be systematic cooperation with the officers responsible for decision as to vocational training.*

The selection of an occupation must take into account the fact that the tendency to a seizure may present a definite hazard in particular types of work. Furthermore, it should be recognized that, at least in New York State, the Workmen's Compensation Laws serve as a definite bar to employment in many occupations.

Medical Supervisory Staff

12. *It is unnecessary for the City authorities to supply medical attention for these children. Medical supervision for administrative purposes should be supplied by specially qualified physicians of the School Medical Service of the Department of Health.*

If the problem of the epileptic children, totaling perhaps 1,000 in New York City's school system, is to be intelligently handled, and if educators as well as physicians expect to learn anything or to measure the accomplishments of whatever educational program is devised, there should be continuous and competent medical supervision of these children. The physicians assigned to such supervisory duty should be competent to judge the value of medical reports submitted by private physicians or hospitals, and be able to make personal interviews and examinations when indicated in order to supplement the information obtained from the various sources.

Such a staff, with authority and responsibility, would also serve to minimize the attempts of parents and others to influence school officers unwisely or improperly on matters which are basically of medical or psychiatric nature.

Adequate Records

13. *Any department responsible for the handicapped should keep adequate records and submit analyses and reports which are supported by facts.*

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